

**UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
ARIZONA
TUCSON FIELD OFFICE**

EA #: AZ-420-2005-013

Project Name:

BLM Contact Person:

Legal Description and Map Name: Public land administered by the BLM in the Las Cienegas National Conservation, along Cienega Creek at Wood Canyon, northeast of the town of Sonoita, Pima County, Arizona. The general location is T 18S., R. 17E. Sec. 14 of the Gila and Salt River Principal Meridian. The area is covered by the (name) 7.5' USGS quadrangle, and shown on Map 1.

I. INTRODUCTION

Background:

Cienega Creek is a perennial stream that flows north and drains approximately 120 square miles. Wood Canyon flows northwest and drains about 12 square miles. The main channels of Cienega Creek and Wood Canyon (dry) are parallel as they approach their confluence.

The Need for the Proposal:

A streamflow gauging station is located on Cienega Creek approximately one-half mile upstream of the confluence with Wood Canyon. The elevation of Cienega Creek above the gauging station is maintained by a natural agglomerate and bedrock foundation, associated with hills adjacent to the west bank, which creates waterfalls and a drop of approximately 15 feet down to the elevation of Wood Canyon. The BLM would like to maintain this drop to avoid headcutting and erosion, as a natural fish barrier, and to maintain the existing gauging station.

Cienega Creek has a bend upstream of the gauging station, which shows historic cutting towards Woods Canyon. This trend in stream channel migration is due to the existing bedrock pushing the channel into the more erodible fine soils along the east bank. It is anticipated that flood events will fell a large tree (noted in text and figures as "Big Tree") that prevents cutting towards the Wood Canyon channel. There is currently about a 250 foot separation between the two channels. The tree is highly undercut into the root ball by flood flows. Erosion or cross channel cutting in the area of the gauging station and upstream is a major concern. Headcutting of Cienega Creek would occur if the short circuit to Wood Canyon is made.

Conformance with Land Use Plan:

The proposed action is subject to the Las Cienegas Resource Management Plan, approved July, 2003. This proposed action has been reviewed to determine if it conforms with the land use plan terms and conditions as required by 43 CFR 1610.5, BLM MS 1617.3.

Specific guidance is found in the Las Cienegas Resource Management Plan, Decision WS25, page 31.

Relationship to Statutes, Regulations or Other Plans or Policies:

(State law, county, non-BLM)

The BLM decision only authorizes use of BLM land. Use of non-BLM land (National Forest, State Trust land, private land) is subject to the agency or private landowners' permission.

(USFWS Section 7) Public lands in the area are subject to the current *(T&E species)* protocol.

(Include Land Health Standards reference)

II. THE PROPOSED ACTION AND ALTERNATIVES

Proposed Action: The proposed action is to stabilize the reach of Cienega Creek above the waterfall using low tech, minimally intrusive methods designed to improve the overall normal and flood flows through the reach. Objectives are to decrease erosion, prevent a short circuit of Cienega Creek flow to Wood Canyon, and try to stabilize the reach, create sedimentation from flood flows on the east bank of the reach, and divert flood flows westward away from eroding the Big Tree Root Ball. Specific actions are:

1. Stabilize the Big Tree, and open up the flood water channel cross section at the fallen limb, which will also direct the flood flows away from the root ball. This includes: moving large fallen limb from east channel and placing it on east bank upstream from Big Tree; removing several small trees from west channel (attempt will be made to transplant small trees to east bank of east channel if possible) ; protect east bank upstream of Big Tree by staking downed branches and sediment logs along bank.
2. In area immediately downstream from Big Tree: Direct the flows towards the west creek channel, away from the east channel and direct the normal and flood flows towards the west bank and conglomerate waterfall and decrease the saturation of the east bank and direct flows away from the east. Encourage sedimentation to the east bank, direct flows away from Woods Canyon. Sediment logs, willow stakes, and downed material would be used to block the east channel, directing flow to the west channel. A small tree blocking the west channel would be removed.
3. Direct flood and most of the normal flows over the conglomerate to prevent sub-soil saturation to the east and prevent further undercutting of the conglomerate waterfall by the impinging flood flows from the east bedrock waterfall. Currently, the waterfall is working its way upstream. Approximately twenty feet of six inch cement curbing would be placed on the conglomerate above the waterfall in order to direct normal flows to the west.
4. In order to accomplish the above tasks, the abandoned road between Las Cienegas Road 910b and the stream gauge will need to be repaired for safe passage of a medium weight truck. Repair work includes collapsing soil pipes and filling sink holes in the roadway.
5. During construction, if any archaeological artifacts or features or fossils are encountered, work shall cease and the BLM archaeologist will be notified immediately. Work cannot resume until clearance is given by the BLM archaeologist.
6. Equipment will be washed prior to entering the project area to prevent the introduction of weeds or weed seed.
7. Post project monitoring and maintenance will consist of site inspections, maintaining photo points, and repositioning or replacement of bank armoring if needed.

No Action Alternative: No stabilization efforts would be made. Monitoring stream conditions would continue.

Intensive Stabilization Alternative: This alternative includes all the activities included in the Proposed Action. In addition the following actions would be taken:

1. In the reach upstream from the Big Tree trunks, jacks, silt fencing, and rock-filled gabion baskets would be placed and anchored to deflect flow westward and encourage sedimentation in the bend upstream of the Big Tree. Jacks are cross bolted steel rail structures designed to retain sediment. Rock for the gabions would be gathered from Mattie Canyon. Tree trunks, gabions, and jacks would be anchored using bolts and cables.
2. Concrete curbing would be placed to form a continuous six inch high wall diverting flow onto the conglomerate layer above the waterfall area. Concrete capping would be installed on eroded bedrock near the top of the waterfall to slow erosion.

3. Gabions, geo-fabric liners, and rip-rap would be installed in order to armor east bank between Big Tree area and waterfall.

III. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES:

Critical Elements: The following critical elements are not affected by the proposed action or alternatives because they do not occur in the proposed use area, or because of the nature of the proposed action: Air Quality, National Energy Policy, Wilderness, Weeds, Native American Religious Concerns, Prime Farm Land, Hazardous or Solid Wastes.

ACEC: The project area is within the Empire-Cienega ACEC.

Impacts of the Proposed Action: The proposed action conforms with the management prescriptions for the Empire-Cienega ACEC, Las Cienegas Resource Management Plan, Appendix 6.

Impacts of the No Action Alternative: The no action alternative is inconsistent with the management prescriptions for the Empire-Cienega ACEC, Las Cienegas Resource Management Plan, Appendix 6. Management prescription 15 calls for the stabilization of the Wood Canyon watershed.

Impacts of the Intensive Stabilization Alternative: The proposed action conforms with the management prescriptions for the Empire-Cienega ACEC, Las Cienegas Resource Management Plan, Appendix 6.

Threatened and Endangered Species: The study areas are located inside the riparian zone and therefore inside the range of the Southwestern Willow Flycatcher. The Gila Top Minnow, a federally listed endangered species, occurs in Cienega Creek. The Gila Chub, a species proposed for listing, also occurs in Cienega Creek.

Impacts of the Proposed Action: Project activities may cause a temporary disturbance to birds and mammals as a result of noise. The study area is potential habitat for the Southwestern Willow Flycatcher, Gila Chub, and Gila Top Minnow.

The project will take place in the stream channel and riparian zone of Cienega Creek. Short term disturbances include small tree removal and the re-routing of the Cienega Creek channel. Long term effects will be the stabilization of the stream channel and protection of the riparian zone.

Impacts of the No Action Alternative: Wildlife habitat will remain under threat by headcutting and excessive erosion under the no action alternative.

Impacts of the Intensive Stabilization Alternative: Project activities may cause a temporary disturbance to birds and mammals as a result of noise. The study area is potential habitat for the Southwestern Willow Flycatcher, Gila Chub, and Gila Top Minnow.

The project will take place in the stream channel and riparian zone of Cienega Creek. Short term disturbances include small tree removal and the re-routing of the Cienega Creek channel. Long term effects will be the stabilization of the stream channel and protection of the riparian zone.

Floodplain: The area of analysis is within the flood plain of Cienega Creek.

Impacts of the Proposed Action: The proposed action is designed to stabilize and restore the floodplain to proper function.

Impacts of the No Action Alternative: Erosion will continue to destabilize the floodplain in the study area.

Impacts of the Intensive Stabilization Alternative: The alternative is designed to stabilize and restore the floodplain to proper function.

Cultural Resources: The study area potentially contains significant artifacts as well as significant fossil resources. A cultural survey of the project area was conducted December, 2004. No objects of concern were found within the project area.

Impacts of the Proposed Action: Known cultural sites will not be impacted by the proposed action. The project will not affect the characteristics of any site eligible for inclusion into the National Register of Historic Places. Any sites discovered during the project will be handled in accordance with the project plan.

Impacts of the No Action Alternative: Archeological sites will continue to be at risk from continued erosion under the no action alternative.

Impacts of the Intensive Stabilization Alternative: Known cultural sites will not be impacted by this alternative. The project will not affect the characteristics of any site eligible for inclusion into the National Register of Historic Places. Any sites discovered during the project will be handled in accordance with the project plan.

Wetlands/Riparian Zones: The area of analysis is within the riparian zone of Cienega Creek.

Impacts of the Proposed Action: Some riparian trees will be removed as part of the proposed action. Attempt will be made to transplant removed trees to other locations within the project area. Removed willow trees may be planted as "willow stakes", a method of sprouting new trees from branches of older trees. The future stability of the riparian community will be strengthened as a result of the proposed action.

Impacts of the No Action Alternative: Riparian communities upstream from the proposed project area will remain at risk from excessive erosion and headcutting.

Impacts of the Intensive Stabilization Alternative: Some riparian trees will be removed as part of this alternative. Attempt will be made to transplant removed trees to other locations within the project area. Removed willow trees may be planted as "willow stakes", a method of sprouting new trees from branches of older trees. The future stability of the riparian community will be strengthened as a result of this alternative.

Wild and Scenic Rivers: Cienega Creek is eligible for designation as a Wild and Scenic River. None of the alternatives will affect those characteristics that make Cienega Creek eligible for designation as a Wild and Scenic River.

Water Quality, Drinking or Ground: Surface water in Cienega Creek displays high turbidity, an indicator of excessive erosion.

Impacts of the Proposed Action: Turbidity in Cienega Creek may be reduced as a result of stabilizing the creek bank and protecting erosive soils.

Impacts of the No Action Alternative: Surface water in Cienega Creek may continue to display high turbidity due to excessive erosion.

Impacts of the Intensive Stabilization Alternative: Turbidity in Cienega Creek may be reduced as a result of stabilizing the creek bank and protecting erosive soils

Soils: Soils in the area of analysis are highly erodible and dispersive, containing significant percentages of silt. Soil piping and collapse features are common.

Impacts of the Proposed Action: The proposed action will provide some protection for erodible soils in the form of bank armoring. In addition, by directing stream flow onto the indurated conglomerate layer above the waterfall, the proposed action is expected to decrease the rate of soil piping to the east by reducing groundwater flow between Cienega Creek and Wood Canyon.

Impacts of the No Action Alternative: Soil piping and erosion are expected to continue unabated in the area of analysis.

Impacts of the Intensive Stabilization Alternative: This alternative will provide more protection for erodible soils in the form of bank armoring. In addition, by directing stream flow onto the indurated conglomerate layer above the waterfall, the proposed action is expected to decrease the rate of soil piping to the east by reducing groundwater flow between Cienega Creek and Wood Canyon.

Environmental Justice: Sonoita is the nearest community to the project area. The project is not expected to impact these communities. None of the alternatives will not disproportionately affect any low income or minority communities.

Cumulative Impacts: Cienega Creek, Wood Canyon, Mattie Canyon, and Spring Water Canyon display effects of accelerated erosion. This action is the second in a series of stabilization/restoration being considered for the watershed. The first project was the restoration of the flow of Cienega Creek to its natural channel between Empire Gulch and Mattie Canyon.

Cumulative Impacts of the Proposed Action: The proposed action is expected to be followed by some type of future action to stabilize or restore Wood Canyon.

Cumulative Impacts of the No Action Alternative: The cumulative impacts of the no action alternative will be continued excessive erosion and downstream sedimentation. Potential cumulative impacts should Cienega Creek flow be captured by Wood Canyon include head cutting on Cienega Creek and Wood Canyon upstream of the point of capture, loss of riparian vegetation and aquatic habitat, accelerated erosion and sedimentation, scouring of lower Wood Canyon, and the loss of use of the current Cienega Creek stream gauge.

Cumulative Impacts of the Intensive Stabilization Alternative: This alternative is expected to be followed by some type of future action to stabilize or restore Wood Canyon.

Description of Mitigation Measures: *(repeated from proposed action)*

Proposed Action: During construction, if any archaeological artifacts or features or fossils are encountered, work shall cease and the BLM archaeologist will be notified immediately. Work cannot resume until clearance is given by the BLM archaeologist. Equipment will be washed prior to entering the project area to prevent the introduction of weeds or weed seed.

No Action: Monitoring of the project area will continue.

Intensive Stabilization Alternative: During construction, if any archaeological artifacts or features or fossils are encountered, work shall cease and the BLM archaeologist will be notified immediately. Work cannot resume until clearance is given by the BLM archaeologist. Equipment will be washed prior to entering the project area to prevent the introduction of weeds or weed seed.

Compliance and Area Monitoring: Post project monitoring and maintenance will consist of site inspections, maintaining photo points, and repositioning or replacement of bank armoring if needed.

PREPARERS

Daniel Moore, BLM Hydrologist

Persons and Agencies Consulted:

Jeff Simms, BLM Fisheries Biologist
Mark Fredlake, BLM Wildlife Biologist
Max Witkind and Patricia Gibson, BLM Archeologists
Rodney Tang, Bureau of Reclamation Engineer

FINDING OF NO SIGNIFICANT IMPACT

EA Number: AZ-420-2005-013

Lease/Serial/Case File No.

BLM Office: Tucson Field Office

Finding of No Significant Impact:

I have reviewed the environmental assessment, #AZ-060-2005- , Cienega Creek Stabilization at Wood Canyon, including the explanation and resolution of any potentially significant environmental impacts. I have determined that the proposed action with the mitigation measures listed below will not have any significant impacts on the human environment and that an EIS is not required. I have determined that the proposed action is in conformance with the Las Cienegas Resource Management Plan approved in Record of Decision dated July 2003.

Below are the substantive reasons for finding no significant impact:

- **The proposed action is consistent with the Las Cienegas RMP**
- **The proposed action will provide protection for riparian habitat otherwise at risk of degradation due to excessive soil erosion.**

Attachments: EA No. AZ-420-2005-013

Field Manager

Date

DECISION RECORD

EA Number: AZ-420-2005-013

Lease/Serial/Case File No.

BLM Office: Tucson Field Office

Decision: It is my decision to select the proposed action which is to stabilize the reach of Cienega Creek between the USGS gauging station and Sanford Canyon using low tech, minimally intrusive methods designed to improve the overall normal and flood flows through the reach.

Alternatives Considered:

The “Intensive Stabilization Alternative” consisted of the same actions as the proposed action with the addition of steel jacks, rock gabions, and additional concrete work. This alternative was rejected as the need for the additional work is not clearly demonstrated based on current information.

The second alternative to the proposed action that was considered in the environmental assessment was the “No Action” alternative. This alternative was rejected as it is inconsistent with the management prescriptions for the Empire-Cienega ACEC, Las Cienegas RMP, Appendix 6.

Rational for Decision: The proposed action is specifically provided for in the Las Cienegas RMP, Appendix 6. The environmental assessment analyzed the potential impacts to the environment and the public should the application be granted. A FONSI has been signed; therefore there are no significant impacts to the environment that would require an environmental impact statement. By selecting the proposed action, the Tucson Field Office is implementing this portion of the Las Cienegas RMP.

Mitigation Measures:

During construction, if any archaeological artifacts or features or fossils are encountered, work shall cease and the BLM archaeologist will be notified immediately. Work cannot resume until clearance is given by the BLM archaeologist. Equipment will be washed prior to entering the project area to prevent the introduction of weeds or weed seed.

Terms / Conditions / Stipulations: per 43CFR 10.4(g):

“All Federal authorizations to carry out land use activities on Federal lands or tribal lands, including all leases and permits, must include a requirement for the holder of the authorization to notify the appropriate Federal or tribal official immediately upon discovery of human remains, funerary objects, sacred objects or objects of cultural patrimony pursuant to Sec. 10.4(b) of these regulations.”

“There will be no adverse energy impact”.

Field Manager

Date

Attachments: Finding of No Significant Impact dated _____
Environmental Assessment –